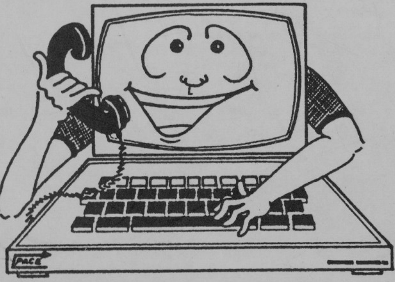
COMMSTAR Auto~dial Emulation



User Guide

PACE

Commstar Auto-dial Emulation

User Guide

Contents

1.0 Introduction
2.0 Getting started

  2.1 Configuring the disc

3.0 The Dialler menu
4.0 Index Structure
5.0 Using the dialler

  5.1 <D>ial
  5.2 Dialling numbers from the index
  5.3 <E>dit
  5.4 <L>oad
  5.5 <R>epeat
  5.6 <S>ave
  5.7 <M>onitor
  5.8 <T>erminal & <P>restel
  5.9 <A>ttributes

6.0 The Attribute menu

  6.1 Cursor-right & Cursor-left
  6.2 Cursor-up & Cursor down
  6.3 <Tab> - Assign
  6.4 Baud Rate
  6.5 Data Formats
  6.6 Enq Seq

    6.6.1 Function keys and PSS

  6.7 Fkey File

7.0 Returning to Commstar

1.0 Introduction

This manual describes the software emulation file DIALEM which is designed for use with the Commstar communications ROM. The software will operate with all versions of Commstar which include the <G>et emulation command and is written specifically for use with the Nightingale Accessory board.

Included in the software are facilities to dial any specified number via the Nightingale Accessory board i.e. a telephone line is needed but no telephone device is necessary. In addition, lists of 10 numbers referred to as indexes can be created (and edited), stored on disc and loaded as required. If the software successfully connects to a remote system i.e. the number dialled is not engaged or unobtainable, it will proceed to configure the Nightingale baud rates appropriately so that no manual operation of the modem is necessary other than connection and disconnection via the 'Modem connect' button.

The software is very simple to use and is provided on one single-sided disc. We regret that the software is not available on tape.

Should you encounter any difficulties during use of the software or if you have any useful suggestions for improvements please write to :

Customer Services
Pace Micro Technology
Juniper View
Allerton Road
Bradford
West Yorkshire
BD15 7AG

Telephone (0274) 488211

2.0 Getting started

IMPORTANT

BEFORE you start to use the Auto-dial software make a COPY of the master disc using *BACKUP. The disc is not protected. When this is done read this section and the section on Configuring the disc CAREFULLY before proceeding !

When you have made a copy place it into your drive and obtain a catalog listing using the *CAT DFS command. You will notice that there are 10 files on the disc :

```
    !BOOT               CONFIG
    VERSION

  A.!INDEX            A.DIALEM
  B.DIALEM
  C.DIALEM
  D.DIALEM
  E.DIALEM
  F.DIALEM
```

The DIALEM files are all copies of the same dialling program but have been assembled to load at different locations in memory. Each consists entirely of machine code and data in a format consistent with the requirements of the Commstar emulation command. They may only be used in conjunction with Commstar and must be accessed using the <G>et emulation command. The !INDEX file contains the default telephone numbers and setup information for DIALEM. Again there are three copies to match the DIALEM files.

The reason for having more than one copy of the dialling software is to cater for the different values of PAGE which are used by different filing systems. Six versions are currently supplied which will work with PAGE at &1500, &1900, &1A00, &1B00, &2400 and &1200.

The file VERSION contains the Version number and copyright message for the disc. This can be listed using *TYPE VERSION

2.1 Configuring the disc

Before you use the disc it must be configured for your system. Fortunately this can be carried out automatically by the CONFIG program on the disc. To RUN it just press SHIFT and BREAK (i.e. auto-boot the disc). This program will select the correct files needed for your system and delete the others. When it is finished there will only be three files remaining, DIALEM, I.!INDEX and VERSION, and the disc will be ready to use.

To get started, enter Commstar in Terminal mode now i.e. use *C* or *COMMSTAR rather than *COMMP (*COMMP is supported by later versions of Commstar only). If you have a mouse fitted you will be presented with a suitable message whilst the software disables the mouse ROM, this is necessary to allow autodialling.

If you are ready to proceed, press <G> for <G>et emulation, the screen will clear and you will be asked for a filename. Type DIALEM and press <Return>.

Commstar will load the emulation file and return you to the main menu. You will notice that the menu is now slightly different from its normal format. Firstly, the Auto dialler software is installed as a new option underneath the <G>et emulation option and may be accessed via the <!> key. You will also notice that the menu title now says 'Terminal AD' (Terminal mode with Auto-Dial). One other difference is that the buffer size is reduced with the emulation file loaded. This is because the file is positioned in memory at the bottom of the buffer space, just above PAGE.

If everything appears as expected then you are ready to proceed. Any problems encountered at this stage should be referred to your dealer or directly to ourselves.

3.0 The Dialler menu

Once loaded, the dialling software may be accessed from the menu at any time during a Commstar session by pressing <!>.

It is important that you do not press the <BREAK> key while an emulation is loaded as this will return Commstar to its 'BOOT' state and remove the <!> option from the menu. If you do this accidentally it will be necessary to <W>ipe the buffer and re-load the emulation file via the <G> command.

Assuming that the <!> Auto dialler option is present, press <!> (shift 1). The dialler menu will now be displayed consisting of a title line, a list of 10 numbers (the default index) and at the bottom of the screen three lines of command options. All options are accessed with a single key press as is usual in Commstar. The very bottom line of the screen is used for the Select ? prompt and to display any warning, error or status messages.

Most of the commands are self-explanatory but you should read the following descriptions carefully before attempting to use the software. You should also be fully aware of the operation of both Commstar and Nightingale with Accessory board.

4.0 Index structure

The list of numbers shown in the centre of the dialler menu is referred to as an index. Any number of index files containing the telephone numbers of up to 10 remote systems may be created and stored on disc.

The list of numbers which are included on your screen now comprise the default list which are normally stored in the file called !INDEX in the "I" directory of the disc. You may alter any of these default numbers using the <E>dit command and <S>ave the new index as another file or as !INDEX which will replace the original default file. You will normally store the numbers and details of those systems which you use most frequently in the !INDEX file as this is always loaded by default.

You may also want to copy the DIALEM file onto a number of discs and create a different I.!INDEX file on each. This will allow you to log onto any particular system with the minimum of fuss.

Each directory you create is simply a table consisting of 10 telephone numbers and their associated characteristics. There are three items of information which are always associated with each index entry in the menu. These are the name of the remote system, the number of an associated attribute set and the actual telephone number itself.

The filename of an index can be any standard DFS filename. You should NOT specify a directory, DIALEM will automatically save index files in the "I" directory on the disc and you should ensure that no files other than genuine index files are stored in the "I" directory.

5.0 Using the Dialler

5.1 <D>ial

The <D>ial option instructs the Nightingale to dial a telephone number. However, it's operation is perhaps slightly different than you would expect. If you use the <D> option you must actually type the telephone number you wish to dial at the keyboard and end it with <Return> i.e. the <D> option does NOT use a number from the index file, it is incorporated so that 'one-off' calls can be made to systems that are not used on a regular basis.

On pressing <D> you will be asked for the telephone number :

Enter No?

which should be preceded by either a "T" or a "P" to instruct DIALEM to switch into either Terminal mode or Prestel mode respectively once a connection has been established.

You will see later (Section 5.9) that each number in an index has an associated attribute set. When you dial manually via the <D> option, attribute set 0 will be automatically selected for a 'T' number and attribute set 1 is used for 'P' number. These two attribute sets normally contain the standard Commstar Terminal/Prestel mode default values, you should be careful if you alter these sets.

To dial a number now, check that the Modem Connect switch is depressed and enter the telephone number (not forgetting to include dialling codes or prefixes for 'outside lines'. On pressing <Return> Commstar will proceed to dial the number and wait for a response.

When a number has been dialled, one of four things can happen :

1) the call will be answered with a carrier as expected.
2) the line will be engaged.
3) the call will be answered by voice.
4) the call will be unanswered or unobtainable

In the event that a carrier is detected the call is deemed to be successful and on receipt of valid data, Commstar will switch into Chat mode ready for communication.

Remember that the <D>ial option requires you to enter the appropriate telephone number at the keyboard. The only characters allowed in the number are the digits '0'..'9', '#' and '-'. Spaces must NOT be used between digits. The '#' character is used to place a pause in the number. This is useful on systems where it is necessary to dial a prefix to obtain an outside line. The '#' would be placed after the prefix to allow time for the secondary dialling tone to appear.

eg. 9#01-618

Hyphens are allowed simply to break up the number on the screen. They are not significant in any other way.

5.2 Dialling numbers from the index

To dial one of the services that is included in the currently loaded index just type the menu number (0 to 9) that is associated with the required service.

The telephone number will be dialled and Commstar, on detection of a carrier, will configure itself according to the specified attributes and then switch into <C>hat mode on receipt of valid data (usually an 'enquiry sequence').

Note that the modem connect button must be depressed before you select dialling. If it is not then a warning message :

Modem not connected .. Please connect !

will be displayed. You may now connect the modem and DIALEM will proceed to dial the specified number.

This is where the real beauty of the software and accessory board are realised. Once you have specified the attributes of a service, Commstar can carry out all other operations associated with making a call, automatically. Fourteen separate attributes are associated with each service and DIALEM itself will select the Nightingale baud rate and whether it operates in originate or answer mode. Sections 6.4-6.7 describe each of the possible attributes and settings in more detail.

5.3 <E>dit

The three basic items in any index entry can be edited using the <E> option. Pressing <E> will cause Commstar to prompt you with :

Edit which no ?

In response type the number of the entry that you wish to change. You will be required to enter the new name, attribute set and telephone number of the service, each new value being displayed in the index as it is entered. Pressing just <Return> for any item will leave it unchanged.

When all three have been entered the Select ? prompt will be re-displayed. If you wish to save the changes you have made you must use the <S>ave command described below. Note that changes made in this way will be lost when you exit Commstar unless they have been <S>aved.

5.4 <L>oad

The <L> command is used to load an alternative index file into the dialler. Pressing <L> will cause the screen to clear and display a catalog of the files on the current disc/drive. You will then be prompted to enter the filename for the index that you require. Remember that you need only specify the filename and NOT the directory, DIALEM automatically precedes the filename with the directory 'I'.

Hint : It is good practise to keep numbers for similar systems in one index and to give that index a sensible name. For instance, you might keep 300 baud bulletin board numbers in an index called '300BBS'.

When you have entered the filename, DIALEM will load the index (if it exists in the I directory of the specified drive) and display the new numbers in the menu. The Select ? prompt will then be present at the bottom of the screen ready for the next command.

5.5 <R>epeat

If you are a bulletin board 'freak', you will certainly have noticed that the more worthwhile systems are almost consistently engaged, even in the dead of night! The <R> command is designed to remove some of the frustration inherent in the fact that virtually all bulletin boards are single user. Pressing <R> will display the prompt :

```
<R>epeat dial which number ?
```

Entering the menu number of the system that you are trying to contact will cause DIALEM to repeatedly dial this number until either it succeeds in making a connection or you <ESC> back to the Select ? prompt.

If the remote system is engaged then DIALEM will redial the number. However, if the number is unobtainable or is answered by voice as opposed to a carrier, the software will still repeat dial. In this case it is EXTREMELY IMPORTANT that you KNOW the number is CORRECT. Would you like to be repeatedly called up by a computer? You should use this option with care.

As with the other dialling options, the modem must be connected before you attempt to dial. If it is not, the warning message will be displayed.

5.6 <S>ave

In conjunction with the <E>dit function this option allows you to create your own index files. Any number of indexes may be created and saved on a disc (limited by the directory capacity of your DFS). On pressing <S> a catalog of the currently existing files will be displayed and you will be asked for the filename to be used for the new file :

Filename ?

This can be any name conforming to DFS naming standards but must NOT include a directory and/or library. All index files are automatically placed in the I directory by DIALEM. For this reason when re-loading an index, DIALEM will only look in the I directory.

Once <S>aved an index may be re-loaded for use or for editing via <L> option in the DIALEM emulation.

Having successfully <S>aved the index, the Select ? prompt will be re-displayed and the index just saved will still be present and ready for use.

5.7 <M>onitor

The Nightingale accessory board includes a speaker for optional monitoring of telephone calls. Switching the <M>onitor option ON within the DIALEM software allows you to hear exactly what is happening on the line i.e. whether the number is engaged or ringing for example. When the monitor option if OFF the speaker remains inoperative although you will still hear the clicking noises made by the dialling relay. The <M> command simply switches the speaker ON and OFF.

Note that the Monitor option is normally OFF and the speaker can only be switched ON before dialling commences. It will remain ON, monitoring the dialling and answering process until a valid connection is established with the remote system.

5.8 <T>erminal & <P>restel

These two options are provided simply so that you may exit the dialler directly into either Terminal Chat mode or Prestel Chat mode.

5.9 <A>ttributes

This option allows you to edit the values in any of the 8 'attribute' tables that are allowed. In total, 14 attributes may be associated with each number in an index so that the configuration and logon processes can be fully automated. An attribute is any of the configuration features that Commstar supports such as Echo, Filter etc and the functions of each attribute are described in the following sections.

6.0 The Attribute menu

Press <A> from the main dialler menu and you will see a new menu appear. The top half of this new screen details the current attribute set and the top line of the screen tells you which attribute set you are currently working with. Up to 8 sets are allowed in total numbered from 00 to 07.

Within each attribute set there are 14 attributes. You will recognise most of these as being the terminal characteristics which Commstar normally allows you to configure manually. The purpose of these sets is to allow you to define the default values which will be used with different host systems.

For example, when using Telecom Gold through a 1200/75 PSS node, you would normally carry out a sequence of operations something like the following :

1) *C* to enter Commstar
2) Use <I> to alter the baud rate and data
   format
3) Use <M> to change the screen mode to 80
   columns (mode 0 or 3)
4) Switch Auto-Line-Feed OFF with <A>
5) Switch XON-XOFF ON with <X>
6) Go to <C>hat mode
7) Dial the number and connect the modem

With the DIALEM software, all of the Commstar attributes may be pre-configured and defined in an attribute set. Each attribute set can then be associated with one or more telephone numbers. Having dialled a number, DIALEM will use the information provided in the attribute set to correctly configure Commstar before going into chat mode.

The defaults for attribute set 00 are shown below :

```
   Baud rate:300/300 0      Format   :8N1
   Filter   :ON             Buffer   :OFF
   Xon/Xoff :OFF            Auto LF  :ON
   Printer  :OFF            Echo     :OFF
   Clock    :ON             Scr Mode:7
   Disc buff:OFF            Enq Seq :^@^@^@
   Fkey file:               C* mode :Term
```

These settings are in fact the same as the Commstar terminal mode defaults, and similarly, set 01 contains the Commstar Prestel mode defaults. You can of course change any of these to suit your own requirements but it is probably better to leave sets 00 and 01 unaltered.

Just below the attribute table you will see a command line and at the bottom of the screen, is the currently loaded index as displayed in the main DIALEM menu.

There are three operations which can be carried out from the attribute menu, these are described in the following sections.

6.1 Cursor-right & cursor-left

The right and left cursor keys are used to cycle forwards and backwards respectively through the attribute sets. Set 00 is displayed by default, this being incremented through 01, 02 etc. each time you press the cursor-right key. From set 07 it will wraparound to 00 again. The cursor-left key will step backwards through the sets.

6.2 Cursor-up & cursor-down

The cursor-up and cursor-down keys are used to select which of the attributes within a set you wish to set or change. Initially the cursor will be positioned at the top left attribute which is the Baud rate. Pressing cursor-down once will re-position you to the next attribute down the list, Filter. Similarly, pressing cursor-up once will move you back up to the Baud rate. Note that pressing cursor-up once more from Baud rate will cause the cursor to wraparound to the bottom right attribute, Enq seq. In this way any of the attributes may be selected.

Having selected the attribute that you wish to alter, the SPACE bar may now be used (in most cases) to cycle through a range of valid options until you choose a new one. For example, if the attribute you are currently working on is the Data format (which is set by default to 8N1 in attribute set 00), pressing the SPACE bar once will change the value to 8E1, 8O1 etc for each keypress. After the full range of options has been scanned the value will return to 8N1.

This method is used to set one or more of the attributes to the desired value for the host system that you intend using. As mentioned earlier, up to 8 complete attribute sets may be created thus allowing automatic access to up to 8 different types of host system. This makes DIALEM very flexible

Most of the attributes function in the same way as normal on Commstar. There are however one or two differences and new attributes which are described below.

6.3 <TAB> Assign

This option is used to assign a particular attribute set to one or more telephone numbers. On pressing <TAB> the message :

Assign to no. ?

will be displayed. You must enter here the number of the system in the current index to which you want to assign the currently displayed attribute set. The number of the attribute set will then be displayed alongside the selected system in the index.

6.4 Baud Rate

When cycling through the baud rates the following are available :

MANUAL
1200/75
75/1200
300/300 O
300/300 A
600/600 H
1200/1200 H

H = Half Duplex
A = Answer
O = Originate

These cover the full range of speeds available with the Nightingale/Accessory board. In general, 300 baud Originate should be used for most bulletin boards and for Prestel, 1200/75 is the correct option.

6.5 Data Formats

The data formats which can be selected are the same as those used normally by Commstar but they are abbreviated as follows :

7 Even 2 = 7E2
7 Odd 2 = 7O2
7 Even 1 = 7E1
7 Odd 1 = 7O1
8 None 2 = 8N2
8 None 1 = 8N1
8 Even 1 = 8E1
8 Odd 1 = 8O1

For most ASCII based system the sixth option, 8N1 will be suitable. Viewdata systems use 7E1 as does Telecom Gold.

6.6 Enq Seq

Many host systems, including Prestel, transmit what is referred to as an 'enquiry' sequence consisting of one or more characters, at the start of communication. This is often the ASCII 'ENQ' character, <CTRL-E>. The purpose of this is to allow intelligent software to respond automatically with an identity code/password sequence and thus facilitate automatic logon.

Up to three enquiry characters can be defined in each attribute set so that DIALEM can respond automatically to most systems. The most frequently used sequence is a single <CTRL-E> character and this is used by many systems in existence. On the attribute set display this appears as :

```
^E^@^@
```

The trailing ^@ characters are Nulls and each character is shown either as a the character itself or, in the case of control characters, a caret (^) followed by the appropriate character. For example, to enter CTRL-E simply hold down <CTRL> and then type the letter E. This will be displayed as ^E. Similarly, <CTRL-@> Null is displayed as ^@.

All three characters must be entered so you should pad out with ^@ if you only require one or two for the enquiry sequence. ^@ will be ignored by the remote system.

Now, when you are logging on to the remote system, DIALEM will wait until it receives the specified Enq sequence before switching into <C>hat mode.

6.7 Fkey file

This option facilitates the automatic transmission of logon strings in one of two ways.

If you enter a string of up to 10 alphanumeric characters preceded by an asterisk <*>, this will be taken as an identity string/password sequence and transmitted automatically once a connection has been established and the enquiry sequence defined in Enq seq has been received. For example, you could enter your Prestel Identity code in this field and on receipt of the ENQ character, the string that you have entered will be sent to the Prestel system automatically.

Alternatively, you can enter in this field the name of a previously prepared disc file which contains a set of function keys definitions. All ten function keys may be programmed within Commstar (see September 84 and June 85 addenda) but specifically, if key f9 is programmed, DIALEM will send the contents of that key automatically.

If the first character of the string defined on key f9 is '!', the string will be sent out 4 seconds after the remote carrier has been detected and locked onto. Dialem does NOT wait for an equiry sequence to be received.

If the definition of f9 does not start with '!', the string will be sent out ONLY in response to the specified enquiry sequence as defined on the attribute menu. If no such sequence is received DIALEM will not switch into Chat mode and the line will subsequently be dropped.

6.6.1 Function keys and PSS

If you wish to automate your logon to Telecom Gold or other services which are accessed via Packet Switched Stream it is important that you read the following.

Assuming that your PSS NUI and ADD are NTLGOLD901TYM and A21320100464 respectively, the appropriate function key definitions would be created by the following sequence (remembering that PSS requires you to enter <Return><Return>A1<Return><Return> to 'wake it up' first) :

```
*KEY0 NTLGOLD901TYM|MA21320100464|M|@
*KEY9 !|M|MA1|M|M|@
*SAVE TGKEYS B00 BFF
```

Remember that PSS does not send an enquiry sequence, hence the '!' at the start of the key definition for f9. This technique would be used for any system that you access via PSS including One-to-One, Knowledge Index etc.

Note that you could also program another key to contain your Telecom Gold ID and password if required.

The *SAVE command saves the function key buffer in a file called TGKEYS (Telecom Gold keys - this could be any filename you choose). Under DIALEM you would then enter TGKEYS (as the Fkey file of the appropriate attribute set. These definitions would then be loaded before dialling commences.

Now when you dial Telecom Gold using DIALEM you will get as far as the NUI? prompt automatically whereupon typing CTRL-f0 would send your NUI & ADD with a single keypress. If you wished, other keys could be programmed to contain command strings e.g. MAIL, OFF etc.

Note the use of the |M sequence to incorporate Carriage Returns into a function key definition. This is the standard technique used on the BBC. The |@ sequence at the end of the string is a requirement for Commstar.

Remember also that in Mode 7 on the BBC the | character is displayed as ||.

7.0 Returning to Commstar

When you have finished <A>ssigning or editing attribute sets you may use the <Escape> key to return to the main DIALEM menu. Do NOT press <Break>, this will lose any changes you have made and you will have to re-load DIALEM. From the main dialler menu, pressing <Escape> once more will return you to the Commstar Terminal menu. Alternatively you may press <P> or <T> to take you directly into Prestel Chat mode or Terminal Chat mode respectively.

COMMSTAR 'DIALEM' EMULATION GUIDE

Errata - 30/08/85

Page 6

Version 1.31 of the DIALEM software disc contains only one copy of the !INDEX file.

Page 26

The ENQ sequence may not now contain characters greater than ASCII 127. Also, it is not now possible to enter codes as a hex-byte pair. Typing FF would place two letter Fs (ASCII 70) in the enquiry sequence.

Pace Micro Technology
Juniper View,
Allerton Road,
Bradford BD15 7AG
Tel: 0274 488211
(A Division of Pace Software Supplies Ltd.)